

## **Research Report R 7930**

**Short Title:** E-Commerce for Developing Countries: Building an evidence base for impact assessment

**Project Start Date:** 01/01/01

**Project End Date:** 31/03/03 (including authorised extensions)

**Organisation:** LSE

**Researchers:** LSE, Professor Robin Mansell and Dr. Daniel Paré  
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## **Background and Objectives**

This project focused on the potential offered by Internet-based business-to-business (B2B) e-commerce for enhancing exports of firms in developing countries. It addressed three questions: 1) Is B2B e-commerce opening new and cheaper access to global markets for developing country producer firms or, conversely, is it strengthening existing buyer - producer relationships and reinforcing existing power relations? 2) Are developing country producers being marginalized by the spread of B2B e-commerce trading relationships that depend on sophisticated information and communication technologies (ICTs) and on efficient logistics systems, electronic payment systems and new certification procedures? 3) How can governments or technical assistance agencies help producers in developing countries to participate in B2B e-commerce developments on an equitable basis?

Many analysts and policy makers believed at the end of the 1990s that B2B e-commerce would lead to a radical change in the way that enterprises trade with each other. The extent of this change was expected to pose stark choices for developing country firms. If they did not change their way of doing business and move into the digital age, they could be marginalized from global markets. Use of the Internet was expected to reduce the effect of geographical distance, providing better information on final markets and lowering the costs of registering a presence in global markets.

The high levels of optimism about the potential benefits of B2B e-commerce were not backed by substantial evidence on whether and how firms were using it. The trading practices of producer firms in developing countries and their use of B2B e-commerce were largely undocumented. This project addressed this gap.

The project has provided empirical evidence about how Internet-based B2B e-commerce operates in practice. It has provided a detailed examination of B2B e-commerce activities in two sectors - garments and horticulture - both of which are important for employment and export-led growth in developing countries. It focused on the features and services offered by B2B e-marketplaces that can be accessed via the World Wide Web and on the ways that firms in Bangladesh, Kenya and South Africa were making use of the Internet to buy or sell products.

## **Methods**

The research strategy for the project differed from that used in many studies of B2B e-commerce which focus on connectivity, network access and security, ICT skills, and e-commerce legislation. The project was designed to investigate relationships between enterprises and their actual and potential customers and suppliers and the potential for changes when the Internet is used to support B2B e-commerce.

The first component of the project involved mapping the attributes of Internet-based of "B2B e-marketplaces" to assess their diversity and the services and functionality they provide. The study examined 117 Web sites supporting a total of 184 e-marketplaces in 2001 for firms in the garments and horticulture sectors. The final project report contains a detailed account of the research method which was guided by a taxonomy of functions and services that might be needed to trade on-line. Each of the e-marketplaces was examined to assess: 1) The type of application used to enable

interaction between buyers and sellers; 2) The kinds of information about products, buyers and sellers that was available to users; 3) Who supplied this information and how (if at all) was it verified; and 4) The services offered to support transaction completion; arrangements for payment, logistics services, etc., and whether these were offered by the Web site provider or by other agents. The results were supplemented by interviews with e-marketplace providers in Europe.

The second component of the research examined whether the development of Internet-based B2B e-commerce was influencing the way producer firms in developing countries engage in international trade in the garments and horticulture sectors. Firm-level research was undertaken in Bangladesh, Kenya and South Africa. In Bangladesh, only the garments industry was studied. The number of interviews by sector and by country is shown in Table 1.

Country	Garments Firms	Horticulture Firms	Key Informants	Total
South Africa	28	12	16	56
Kenya	12	15	14	41
Bangladesh	7	n.a	8	15
<b>Total:</b>	<b>47</b>	<b>27</b>	<b>38</b>	<b>112</b>

Note: n.a. = not applicable.

The key informants included industry experts, business association representatives, chambers of commerce representatives, e-commerce solution providers, and government officials. The producer firms in the country samples were selected because they were known to be active on the international market. They were expected to be implementing B2B e-commerce or to be considering implementation in the near term. These interviews focused on the ways that firms might use Internet applications to generate or sustain their business relationships. Respondents were asked about their: 1) connections to the Internet; 2) use of Internet applications to communication and for information-seeking; 3) transactions that involved any use of the Internet; and 4) experiences with e-marketplaces.

## Findings

The results of this research have called into question many of the more optimistic views about the spread of B2B e-commerce and its potential for integrating developing country firms into the global economy. However, the findings also show that firms are using a variety of Internet applications in their businesses. There has been no massive shift to on-line trading, but the Internet is increasingly important for trading with existing customers or suppliers. The results confirm the crucial importance of empirical investigations of how B2B e-commerce is actually being developed and used.

The overall finding was that the main effect of B2B e-commerce is to enhance the relationships between existing trading partners. The **key message** for policy makers and practitioners is that understanding how international trade is organised and how inter-firm relationships are developed is essential if the use of some types of B2B e-

commerce is to assist producer firms in gaining more equitable access to international markets.

Very little business with new suppliers or customers was being generated by using Internet-based B2B e-commerce. The vast majority of the Web-based e-marketplaces had no applications or services in place to support on-line business. Only a tiny percentage of these sites were providing facilities for payment on-line, the vetting of users was infrequent and buyers and sellers had to rely on information provided at the discretion of their trading partners. The e-marketplace providers were not accepting liability and were doing very little to build trust between potential trading parties. A few firms were managing to sell their products using Bulletin Boards on the Web. The Internet was being used in the same way that off-line trade directories are used. Business deals were being negotiated “off-line” using face-to-face meetings, telephone calls, and faxes.

B2B e-commerce applications were being used primarily to exchange information and to enhance global supply chain integration. The use of the Internet to forge new trade relationships is more likely for trade in occasional products. For core products, developing country exporters operate in global value chains that encourage repeat transactions and require high levels of co-ordination. Supply chain integration using the Internet is likely to expand as information is integrated through the use of multiple Internet-based information channels. However, access to new applications running on the Internet is likely to be by invitation from the “e-marketplace” operator or buyers.

The primary B2B e-commerce application was e-mail. E-mail was being used to maintain contacts along the value chain. Its use was extensive, if not universal, in the two sectors to co-ordinate production schedules, provide complex information, and to send digital images to verify the quality of products. The primary perceived benefit of e-mail by producer firms in developing countries was to reduce communication costs. The use of the Web was limited by inadequate and costly domestic telecommunication infrastructures and slow connection speeds.

For Internet-based B2B e-commerce to become more widespread in a way that benefits producer firms in developing countries, much greater attention will need to be given to how firms relate to each other within global value chains and to the specific types of transactions they are involved in.

“Top-down” government policies promoting “e-readiness” will be unsuccessful unless much greater effort is given to examining how Internet applications are actually being used and to the circumstances around the implementation of new technologies. Policy makers, firms and development assistance agencies should support “bottom-up” approaches that are based on realistic assessments of B2B e-commerce opportunities and obstacles, and region- and value chain-specific solutions.

### **Priorities for policy makers and practitioners:**

Achieving equitable participation in B2B e-commerce developments will require a wholesale rethinking of the goals and focus of policy along the following lines:

*Poor ICT infrastructure* - Much B2B e-commerce policy is focused on reducing the “digital divide”. It puts technology first. The absence of a robust and cost-effective telecommunication infrastructure is not a key factor influencing the types of B2B e-commerce that are favoured by producers in developing countries. Present uses of B2B e-commerce require reliable and cheap access to the public Internet, personal computers and a reliable source of electricity.

*Poor transport infrastructure* - Most developing country exports are material, not digital. The availability of e-commerce raises expectations for faster delivery and this makes the transport infrastructure even more critical for the development of B2B e-commerce. The policy priority is to address “old” issues of providing efficient road and rail links, better port facilities and faster customs clearance.

*Weak or absent legal and institutional infrastructure for B2B e-commerce* - The absence or weakness of the legal and institutional infrastructure attracts much attention in B2B e-commerce discussions. These measures do not appear to be critical for the types of B2B e-commerce that are being implemented in developing countries. Contract commitments and payments are not generally being made on-line. Improving legislation and rules for B2B e-commerce is desirable, but it is not a priority for policy makers who want to improve access to international markets for exporters in developing countries.

*Weak trust infrastructure to support B2B e-commerce* - A trust infrastructure to support B2B e-commerce with respect to quality assurance and buyer and seller redress may be important for some kinds of transactions. However, the sophistication of electronic trust services comes at a high price. More sophisticated technical solutions are unlikely substitutes for existing means of building trust through personal contacts and face-to-face relationships. For boosting opportunities for producer firms in developing countries much more attention needs to be given to commercial practices and especially to the role of intermediaries and brokers in building trust within global value chains.

*Lack of preparedness, awareness and need for training and capacity building* - Lack of preparedness, awareness and the need for training are very important issues. Policy makers and practitioners working in technical assistance agencies should ensure that their responses are not driven by broad-brush ICT and B2B e-commerce strategies. Their responses should be driven by an understanding of how producer firms are integrated in their supply chains and by what they can do to combine their sector-based strengths with the potential of carefully selected applications of ICTs.

Overall, the promotion of B2B e-commerce should be tackled through sector specific initiatives. Further studies are needed to shed greater light on how the organisation of global value chains is affecting supplier-buyer relationships and on the incentives of firms to exchange information and to negotiate prices on-line and off-line.

Policy makers and practitioners in the industrialised and developing countries should put their resources into encouraging “bottom-up” initiatives to define effective uses of ICTs and specific forms of B2B e-commerce in the wider context in which firms are trading. B2B e-commerce policies are needed that match and enhance the capabilities of the firms they are meant to support. The most promising approach is to include

relevant stakeholders in both the analysis of the problems and the formulation of new initiatives. The relevant actors must be able to deepen their understanding of the problems and own the recommended solutions. Action is needed to: 1) release funds to conduct appraisals of trade opportunities and obstacles on a systematic basis across sectors and countries; 2) develop expertise to co-ordinate appraisals that connect industrial sector representatives with those who can help define realistic uses of ICTs; and 3) work with industrial sector forums, other intermediaries, and the firms to decide the priorities for ICT or B2B e-commerce related actions.

## **Dissemination**

Many initiatives were taken formally and informally to draw attention to the project throughout the funding period.

- a draft of the project's IDS Policy Briefing Paper was distributed to representatives from: InterAmerican Development Bank, GTZ, UNIDO, and DFID and positive feedback was received (2001);
- The IDS Policy Briefing Paper was sent as hard copy to some 500 potentially interested parties world-wide and hosted on the project web-site (2001);
- early results of the project were highlighted in Mansell's LSE inaugural professorial lecture in 2001;
- Schmitz presented the main project findings in a lecture at the University of Stuttgart/Germany, in 2002.
- Humphrey presented project findings to a seminar at TIPS in Johannesburg - attended by DFID-SA staff and the South African DTI in 2002;
- Mansell interviewed by BBC radio (Part of the Go Digital Programme): [news.bbc.co.uk/1/hi/technology/1478157.stm](http://news.bbc.co.uk/1/hi/technology/1478157.stm) in 2002;
- Humphrey presented findings to 90 policy-makers and businesspeople at the annual ITC Executive Forum in Montreux, September 2002;
- Paré interviewed by Tim Norman, Sub-editor *Internet Magazine* ([www.internet-magazine.com](http://www.internet-magazine.com)) and project findings serve as basis of argument presented in 'Editor's Opinion' section of January/February 2002 issue;
- Humphrey made a presentation of project findings to an economists group seminar at DFID, February 2003;
- News brief in Balancing Act's News Update 152 (7 April 2003). [www.balancingact-africa.com](http://www.balancingact-africa.com);
- News report in BBC online about project findings based on interview with Humphrey and Mansell.
- A final research report was printed and circulated to over 300 policymakers.

In addition to the above and to the publications listed below, project results were disseminated through Working papers and formal participation in conferences and seminar presentations:

Quarter	Title	Presenter(s)/Authors
APR – JUN 2001	Presentation of research project at session of International Communication Association (ICA), Washington DC, May	Mansell
OCT - DEC 1001	Does this site deliver? B2B e-commerce services for developing countries.	Paré
JAN - MAR 2002	Business-to-business e-commerce and access to global markets: exclusive or inclusive outcomes? Paper presented at CSGR Globalisation conference at Warwick in March.	Humphrey
APR – JUN 2002	Presentation to University of Westminster Business School seminar based on project results (approximately 150 attendees), February 20.	Mansell
	E-marketplace services: Do they support a global market? Paper prepared for the LSE Information Systems Department Conference on IT and Globalisation, London, April 22-23.	Mansell
	B2B e-commerce and developing countries: Deconstructing the Myth. Paper prepared for presentation to Department of Sociology, Queen's University, Kingston, Ontario Canada. May 1.	Paré
	B2B E-commerce and Developing Countries: Deconstructing the Myth. Paper presented at Workshop on Co-ordination, Control and Governance Implications of Electronic Marketplaces, Amsterdam Graduate Business School, Universiteit van Amsterdam, June 10.	Paré
JUL - SEP 2002	B2B E-Commerce and the South African Horticultural Export Industry: current status and future directions, Working Paper ( <a href="http://www.gapresearch.org/production/Sahortiecommerce.pdf">www.gapresearch.org/production/Sahortiecommerce.pdf</a> ) .	Tregurtha & Vink
	E-Commerce in the Garment Industry in Kenya: Usage, Obstacles and Policies, Working Paper ( <a href="http://www.gapresearch.org/production/B2Bkenyagarmentsfinal.pdf">www.gapresearch.org/production/B2Bkenyagarmentsfinal.pdf</a> )	Kinyanjui & McCormick
	Presentation of findings to 90 policy-makers and businesspeople at the ITC Executive Forum in Montreux, Switzerland, September.	Humphrey
OCT – DEC 2002	B2B E-commerce and Developing Countries: Disentangling Myth From Reality. Paper presented at the Association of Internet Researchers (AoIR) International Conference, Maastricht, the Netherlands, October 13-16.	Paré
	E-Commerce for Developing Countries: Building an Evidence Base for Impact Assessment. Paper presented at ITC Regional Executive Forum. Southern Africa Trade Week, Muldersdrift, South Africa, November 25-27.	Paré
	E-Commerce: Lessons Learned From Developing Countries. Paper presented at the ITC Regional Roundtable, Vilnius, Lithuania, December 1-4	Paré
JAN - MAR 2003	E-Marketplace Services – Do they support a global marketplace? Paper presented at the Association for Evolutionary Economics (AFEE) Conference, Washington DC, January 3-5.	Paré & Mansell
	Seminar on project findings to economists group at DFID, February 2003	Humphrey
	Illuminating the Blindspots in E-commerce Strategies for Developing Countries. Paper presented at School of Computing, Information Systems, and Mathematics, London South Bank University, March 17	Paré

## List of Formal Publications

Title	Author(s)
Digital opportunities and the missing link for developing countries. <i>Oxford Review of Economic Policy</i> 17 (2):282-295, 2001.	Mansell
E-Commerce: Accelerator of Development? <i>IDS Policy Briefing</i> , Issue 14: September 2001.	Humphrey, Mansell, Paré, Schmitz
Integrating old and new style commerce: E-commerce and developing countries. <i>Communicator</i> , Quarterly Journal of Indian Institute of Mass Communication, XXXVI No. 2, pp. 3-9, 2001.	Mansell
Does this site deliver? B2B e-commerce services for developing countries. <i>The Information Society</i> , 19(2):1-12, 2002	Paré
E-commerce for exporting garments from South Africa: 'Digital Dividend' or Leap of Faith?, IDS Working Paper 182, 2003	Moodley, Morris, & Velia
<b>The Reality of E-commerce with Developing Countries.</b> Research Report, London: LSE, March 2003	Humphrey, Mansell, Paré, Schmitz

### Forthcoming:

Paper featuring project results commissioned by the journal *Prometheus* Anniversary Issue, due end of May 2003 (Mansell)

## HIGHLIGHTS SUMMARY (500 words)

### THE REALITY OF E-COMMERCE WITH DEVELOPING COUNTRIES

**Does internet based e-commerce provide new trading opportunities for producers in developing countries? Many policy advisors have said "Yes".**

**A recent study by LSE and IDS comes to a different conclusion: *the main effect of e-commerce has been to enhance relationships between existing trading partners rather than to forge relationships with new trading partners.* The message for policy makers is also clear: *you need to understand how trade is organised and how firms develop relationships in order to decide on priority action aimed at supporting producers in your regions or sectors.***

These conclusions come from investigating what actually happens on the Internet and from talking to producers in poor countries who engage in e-commerce. The study was conducted jointly by the London School of Economics and the Institute of Development Studies, Sussex, with research collaborators in Bangladesh, Kenya, and South Africa. The project focused on business-to-business (B2B) e-commerce applications that can be accessed using the Internet and on firms in the garments and horticulture sectors. Both sectors are important for employment and export-led growth in developing countries.

Despite the fact that there is very little empirical research on the actual use of B2B e-commerce in developing countries, it is widely believed that use of the Internet will help producers in developing countries to obtain better information on global markets and give them direct access to new customers. The results of this study show that the main effect of B2B e-commerce is to enhance relationships between existing trading partners. Contrary to earlier expectations, it does little to help firms find new buyers and suppliers.

- Some types of Internet-based B2B e-commerce are developing, but in private, exclusive e-marketplaces, where access is restricted to firms that are already integrated within sector supply chains.
- E-mail and Bulletin Boards are helping to reduce communication costs for producer firms and helping to reduce the costs of accessing certain types of product and price information.
- In horticulture and, to an extent, garments, the position of global buyers is becoming stronger and the structure of global supply chains and the co-ordination needs of buyers and sellers strongly influence the types of B2B e-commerce that are developing.
- Developing country firms selling to global buyers need a reliable and low-cost infrastructure to maintain frequent contact.
- The use of the Internet and a limited number of applications is enabling firms to bypass the voice telephone infrastructure, providing important cost savings.

The message for policy makers and practitioners is clear:

- Understanding how international trade is organised and how inter-firm relationships are developed is essential for designing B2B e-commerce policies that will assist firms in gaining access to international markets.
- Resources should be put into encouraging “bottom-up” initiatives to define effective uses of ICTs and specific forms of B2B e-commerce in the context in which firms are trading.

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[www.gapresearch.org/production/ecommerce.html](http://www.gapresearch.org/production/ecommerce.html) and  
<http://www.lse.ac.uk/collections/media@lse/pdf/Report.pdf> (full report)  
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